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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/857,250	07/20/2001	Paolo Giordani	205 188	3391

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Abelman Frayne & Schwab  
150 East 42nd Street  
New York, NY 10017-5612

EXAMINER
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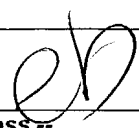
GAKH, YELENA G

ART UNIT	PAPER NUMBER
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1743

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	09/857,250	GIORDANI ET AL.	
	Examiner	Art Unit	
	Yelena G. Gakh, Ph.D.	1743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 February 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 22-48, 53 and 54 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 and 49-52 is/are rejected.
- 7) ☒ Claim(s) 2 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>10/05/01</u>  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-21 and 49-52, drawn to a control device for pickling baths.

Group II, claim(s) 22-48 and 53-54, drawn to a method for controlling free pickling baths.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the common technical feature for both inventions is a combination of means for sampling, analyzing the sample, in particular for constituents concentrations ( $\text{H}_2\text{SO}_4$ , HF and  $\text{Fe}^{+2}$ ,  $\text{Fe}^{+3}$ ) and restoring concentration of chemicals. Such combination is well known in the art, see. e.g. Pedrazinni et al., US 5,843,240; therefore it is not a special technical feature, and the restriction requirements are proper.

2. During a telephone conversation with Jay Cinamon on 05/03/04 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-21 and 49-52.

Affirmation of this election must be made by applicant in replying to this Office action. Claims 22-48 and 53-54 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Claim Objections***

3. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 2 recites a process limitation, rather than the structural feature, and therefore does not further limit the subject matter of claim 1.

In claim 8 on line 4 the word "reagents" is misspelled ("regents").

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-21 and 49-52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites "means to analyze said sample in order to measure a number of parameters according to specific conductivity and potentiometric methodologies", which is an unclear and indefinite expression. It is not apparent from the claim, what are exactly functions of said means? Do these means measure conductivity and potential? Means for measuring redox potential value is recited further, which makes the first recitation even less clear. What is meant by "a number of parameters"? Are they various parameters of fluid, e.g. ionic strength, resistance, etc.? The further recitations of "said parameters" and "said measured parameters" do not have a clear antecedent basis, since the limitation "a number of parameters" was recited previously.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10

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USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation "means to analyze said sample in order to measure a number of parameters", and the claim also recites "said measured parameters are the concentrations of sulphuric acid, of hydrofluoric acid and of bivalent and trivalent iron ions".

Claim 5 is unclear as to what is recited as the further limitation to the subject matter of claim 1? It is completely unclear, how claims 1 and 5 are related. Is the analysis device of claim 5 additional to the control device of claim 1? Is it the same as "means to analyze said sample"?

Claim 7 recites "one of the analysis devices", which lacks an antecedent basis, since the parent claim does not recite any "analysis device". It rather recites "means to analyze the sample". Moreover, it is not clear, how the analysis device can have a function of adding components into the bath, especially in the light of the parent claim 1, which recites separately "restoring means" performing this function.

The definition of the "analysis device (A)" given in claim 8 makes it even more confusing. If the analysis device in fact comprises a sampling module ("means to take a sample" according to claim 1), a reagent storage, dosing means, an analysis vessel with measure electrodes ("means to analyze the sample" according to claim 1?), a logic unit, etc., then how is it related to the control device of claim 1? The components of the analysis device (A) or device A itself do not have antecedent basis in claims 7 or claim 1.

Claim 14 seems to be a literal translation from the foreign document and is not written in a clear and definite language. Claim 14 does not recite comprehensively the structure of a conductivity measure cell. It is not clear, what the "extremity of the conductivity measure cell" might be, or how this extremity can be provided with a glass hollow body. It is also not clear, what is the connection between the analysis vessel, the cell and the glass hollow body. It is

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further not clear from the claim, how the sample can reach the cell if it is circulating inside the hollow body, which is provided "at the extremity" of the cell.

Claim 17 is not clear as to what is claimed as the specific structure of a potentiometric device, e.g. what is connected to "the solution under measure", and how anything can be "connected" to the solution? It is further not clear, how can the electrolyte be continuously passing through a porous septum at "one extremity of a small plastic tube"? What element of the control device makes it continuously passing, and what is the source for such continuously passing electrolyte? What is the "small plastic tube" and what is its function? The structure recited is unapparent.

In claim 20 it is not clear, what is meant by "a plaque having a mirror finished facing downwards"? "Downwards" relative to what?

Claim 21 and 52 are not clear as to what is meant by the "slits (F) placed along the upper edge of the vessel" and what are the means comprising these slits. According to Merriam-Webster On-line Dictionary, "**slit** is a long narrow cut or opening". It is not apparent, how "openings" can be placed along the upper edge of the vessel, and what is their function in the means for chemically washing the analysis vessel.

The structure of the control device recited in claims 14-21 and 52 is not apparent and requires clarification.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1-8, 13 and 49-50** are rejected under 35 U.S.C. 102(b) as being anticipated by Pedrazzini et al. (US 5,843,240) or Katsutoshiitani (GB 2,000,196 A, IDS).

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Pedrazzini discloses a process and apparatus “for stainless steel pickling and passivation without using nitric acid”. “Process for stainless steel pickling consisting in placing the material to be treated in a bath kept at a temperature ranging from 30 °C to 70 °C and containing: a)  $\text{H}_2\text{SO}_4$ , b)  $\text{Fe}^{3+}$ , c) HF, d) emulsifiers, wetting agents, polishing agents, acid attack inhibitors; the bath being kept under agitation with: an air flow and continuously fed with a quantity of oxidizing agent adjusted to the bath redox potential to be kept at 250 mV min” (Abstract). In “Advantages of the Process” (col. 5, lines 58-65) Pedrazzini emphasizes “automatic control possibility: the process according to the invention can always be kept under control by automatic means, which--through analytical determinations (free acids content, iron ion content, redox potential)--continuously meter the amounts of pickling materials and of oxidizer necessary to secure correct operating parameters”. Such automated process inherently involves a control device comprising a sampling module with inputs to pickling tanks comprising  $\text{H}_2\text{SO}_4$ ,  $\text{Fe}^{3+}$  and HF solutions, analysis devices for measuring “free acid [ $\text{H}_2\text{SO}_4$  and HF] contents” and “iron ion content” and “redox potential”, as well as a temperature controller and a logic unit for controlling and managing the analysis procedure and actuating means for correcting the amounts of chemicals. Pedrazzini indicates that hydrogen peroxide used as an oxidizer is disclosed in his EU Patent 582,121 (IDS). “The pickling solution redox potential is measured with a platinum electrode and a reference electrode, e.g. calomel or Ag/AgCl type” (col. 5, lines 12-14).

Katsutoshiitani teaches “a method for controlling pickling solution of stainless steel” analogous to the process and apparatus disclosed by Pedrazzini’s, i.e. using pickling solution comprising  $\text{H}_2\text{SO}_4$ ,  $\text{Fe}^{3+}$ , HF and  $\text{H}_2\text{O}_2$  as an oxidizer, with measuring concentration of the components of the solution and redox potential to keep it a predetermined level. The electrodes of the electrochemical cell are made of a noble metal (Pt, Au, Rd) and AgCl.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. **Claims 9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedrazzini or Katsutoshiitani.

While Pedrazzini or Katsutoshiitani do not specifically disclose using dosing means with different extent of accuracy, it would have been obvious for anyone of ordinary skill in the art to do so, because different operations, e.g. rinsing electrodes and adding chemicals, require different accuracy of dosage, and it is cheaper to use less precise dosing tools for operations which do not require specific accuracy.

12. **Claims 11-12 and 51** are rejected under 35 U.S.C. 103(a) as being unpatentable over Pedrazzini or Katsutoshiitani in view of Oka et al. (US 4,310,563).

Pedrazzini or Katsutoshiitani do not specifically disclose washing means for washing electrodes.

Oka teaches "method for automatically controlling composition of chemical plating solution", performed on the apparatus comprising washing means 16 for electrodes": "an aqueous 7 N nitric acid solution was supplied to the main electrode chamber 7' from a washing



solution tank 16 as a washing solution for the copper oxide electrode for about 10 seconds through the sampling pump 4 before conducting the automatic control of the plating solution, as given above under (d), by switching the three-way electromagnetic valve 6" (col. 5, lines 48-54).

It would have been obvious for anyone of ordinary skill in the art to slightly modify Pedrazzini's or Katsutoshiitani's control device by adding washing means for washing electrodes the way disclosed by Oka, because Oka demonstrates importance of washing electrodes used in similar process of automatic control of the composition of the electrolytic plating bath for copper.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yelena G. Gakh, Ph.D. whose telephone number is (571) 272-1257. The examiner can normally be reached on 9:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yelena G. Gakh  
5/14/04

